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H4
1. (Previously Presented) In a switched telecommunications network having end office switching systems controlled by a common channel signaling system connected to the end office switching systems and to paired signal transfer points, the method comprising:  
monitoring the signaling between the end office switching systems and the signal transfer points and selecting the signaling relating to multiple switched calls and creating a plurality of flat files;  
collating the flat files by transaction;  
processing the collated flat files to create relational files relating to multiple switched calls for multiple called numbers;  
performing an on line analysis program to obtain a multidimensional database from the multiple switched calls to multiple called numbers of said relational files, said on line analysis program supporting interactive analysis for one or more users; and  
generating an on line network traffic load report from the multidimensional database based at least in part on said interactive analysis.
  2. (Previously Presented) A method according to claim 1 wherein said multiple switched calls comprise completed dialed telecommunication sessions between a calling terminal and a called terminal.
  3. (Previously Presented) A method according to claim 2 wherein said multiple switched calls also comprise uncompleted dialed attempts to establish telecommunication sessions between a calling terminal and a called terminal.
  4. (Previously Presented) A method according to claim 3 wherein said traffic load report includes calls dialed to a designated terminal in a designated time period.
  5. (Original) A method according to claim 4 wherein said report includes data relating to the time of connection of completed calls.
  6. (Previously Presented) A method according to claim 5 wherein said report includes data relating to the number of uncompleted calls within a time frame.

7. (Previously Presented) A method according to claim 2 wherein said multiple switched calls comprise completed dialed telecommunication sessions between a calling terminal and a called terminal, and said report includes calls dialed to a designated terminal in a designated time period and data regarding the lengths thereof.

8. (Previously Presented) A method according to claim 7 wherein said multiple switched calls also comprise uncompleted attempts to establish dialed telecommunication sessions between a calling terminal and a called terminal, and said report includes the uncompleted calls dialed to said designated terminal in said designated time period.

9. (Original) A method according to claim 7 wherein said report includes information regarding the routing of said calls.

10. (Original) A method according to claim 9 wherein said report includes information as to whether said calls were routed through a tandem switching system.

11. (Original) A method according to claim 10 wherein said report includes information identifying the originating switching systems, the tandem switching systems, and the terminating switching systems for said calls.

12. (Original) A method according to claim 11 wherein said report includes information as to whether said calls were routed through a tandem switching facility without routing through the tandem switching facility.

13. (Original) A method according to claim 12 wherein said report includes information as to whether said calls were routed through the switch in said tandem switching installation.

14. (Original) A method according to claim 1 wherein said common channel signaling system is an SS7 system and said monitoring occurs on A links in that system.

15. (Original) A method according to claim 14 wherein said monitoring occurs on A links to the originating switching systems and to the terminating switching systems.

16. (Original) A method according to claim 15 wherein said monitoring also occurs on A links to a tandem switching system connected between said originating and said terminating switching systems.

17. (Original) A method according to claim 15 including the step of providing a report of calls dialed to a designated terminal in a designated time period and including identification of the originating switching systems.

18. – 22. (Cancelled)

23. (Previously Presented) In a switched telecommunications network having end office switching systems controlled by an SS7 common channel signaling system using packet switching via A, B, C, and D links connected to paired signal transfer points connected to one another by D links and connected by A links to the end office switching systems, the method comprising:

monitoring the signaling in said A links and selecting the A link signaling relating to call set up;

collating said selected signaling by call;

processing said collated signaling to create relational files relating to multiple switched calls for multiple called numbers;

performing an on line analysis program to obtain a multidimensional database from the multiple switched calls to multiple called numbers of said relational files, said on line analysis program supporting interactive analysis for one or more users; and

generating an on line network traffic load report from the multidimensional database that summarizes ongoing call attempts and completions based at least in part on said interactive analysis.

24. (Original) A method according to claim 23 including the step of providing a report of calls dialed to a designated terminal in a designated time period.

25. (Original) A method according to claim 24 wherein said report includes data relating to time of connection of completed calls.

26. (Original) A method according to claim 25 wherein said report includes data relating to the number of incompletd calls within a time frame.

27. (Original) A method according to claim 25 wherein said report includes information regarding the routing of said calls.

28. (Original) A method according to claim 27 wherein said report includes information as to whether said calls were routed through a tandem switching system.

29. (Previously Presented) In a switched telecommunications network having trunked end office and tandem switching systems controlled by an SS7 common channel signaling system using packet switching via A, B, C, and D links connected to paired signal transfer points connected to one another by C links and connected by A links to end office and tandem switching systems, the method comprising:

monitoring the signaling in said A links and selecting the A link signaling relating to call set up between end office switching systems through a tandem switching system;

collating said selected signaling by call based at least in part on A link signaling to and from said tandem switching system;

processing said collated signaling to create relational files relating to multiple calls;

performing an on line analysis program to obtain a multidimensional database from multiple switched calls of said relational files, said on line analysis program supporting interactive analysis for one or more users; and

generating an on line network traffic load report from the multidimensional database based at least in part on said interactive analysis that summarizes successful and unsuccessful attempts to route calls to multiple called numbers through said tandem switching system.

30. (Original) A method according to claim 29 including the steps of providing reports of the identity of the end office switching systems from which calls were routed to said tandem switching system.

31. (Original) A method according to claim 30 including the steps of providing reports of the identity of the end office switching systems to which calls were routed from said tandem switching system.

32. (Previously Presented) A switched telecommunications network having a trunked end office and tandem switching systems controlled by an SS7 common channel signaling system using packet switching via A, B, C and D links connected to paired signal transfer points connected to one another by C links and connected by A links to the end office and tandem switching systems, comprising:

monitors interfacing to the signaling in said A links and selecting the A link signaling relating to call set up between end office switching systems through a tandem switching system;

processing means collating said selected signaling by call based at least in part on A link signaling to and from said tandem switching system;

processing means processing said collated signaling to create relational files relating to multiple switched calls to multiple called numbers;

on line analytical processing means providing a multidimensional database and supporting interactive analysis for one or more users, wherein said relational files are processed to consolidate and summarize successful and unsuccessful attempts to route calls to multiple called numbers through said tandem switching system and provide traffic load reports thereof.

33. (Original) A switched telecommunications network according to claim 32 wherein said online analytical processing means provides a data warehouse including multiple related tables which said on line analytical processor drills into to retrieve additional information.

34. (Original) A switched telecommunications network according to claim 33 wherein said on line analytical processor is object oriented.

35. (Original) A switched telecommunications network according to claim 33 wherein at least part of said information is obtained from switching systems in said switched telecommunications network.

36. (Original) A switched telecommunications network according to claim 33 wherein at least part of said information is obtained from an automated message accounting system in said switched telecommunications network.

37. (Original) A switched telecommunications network according to claim 33 wherein at least part of said information relates to calls completed through intra switching system connections.

38. (Previously Presented) In a switched telecommunications network having end office switching systems controlled by a common channel signaling system connected to the end office switching systems and to paired signal transfer points, and including automatic message accounting equipment recording call details of a connection transaction, the method comprising:

monitoring the common channel signaling between the end office switching systems and the signal transfer points and selecting the signaling relating to multiple switched calls;

collating the selected common channel signaling by a call of the multiple switched calls;

collating automatic message accounting equipment output recording call detail; and

processing the collated common channel signaling and automatic message accounting output to provide a multidimensional database to consolidate and summarize ongoing multiple switched calls and provide reports thereof.

39. (Original) A method according to claim 38 wherein said last named processing is performed at least in part by on line analytical processing means providing a multidimensional database, wherein relational data is processed to consolidate and summarize successful and unsuccessful attempts to route calls to completion.

40. (Original) A method according to claim 38 wherein said on line analytical processing means extracts data from storages in said switched telecommunications network in addition to said common channel signaling and said automatic message accounting equipment to provide said reports.

41. (Original) A method according to claim 40 wherein said storages at least in part comprise storage associated with end office switching systems.

42. (Original) A method according to claim 41 wherein said extracted data relates to equipment associated with the switching system.

43. (Previously Presented) A switched telecommunications network having trunked end office and tandem switching systems controlled by an SS7 common channel signaling system using packet switching via A, B, C, and D links connected to paired signal transfer points connected to one another by C links and connected by A links to the end office and tandem switching systems, said network including:

monitors interfacing to the signaling in said A links and selecting the A link signaling relating to call set up between end office switching systems;

processing means collating said selected signaling by call based at least in part on A link signaling to and from said end office switching systems;

processing means processing said collated signaling to create relational files relating to multiple switched calls to multiple called numbers;

automatic message accounting equipment recording call details of call set up and tear down;

on line analytical processing means supporting interactive analysis for one or more users and providing a multidimensional database, including information relating to said call set up and tear down obtained from said relational files; and

a program for processing said multidimensional database to consolidate and summarize successful and unsuccessful attempts to route calls to multiple called numbers through said tandem switching system and to provide traffic load reports thereof based at least in part on said interactive analysis.

44. (Currently Amended) A voice-switching telecommunications network having service switching points controlled by a common channel signaling system connected to the service switching points and to paired signal transfer points that maintain normal operation of the voice-switching telecommunications network, the method comprising:

monitoring ~~call-carrying voice~~ signaling between the service switching points and the signal transfer points and selecting the ~~call-carrying voice~~ signaling relating to multiple ~~switched~~ interoffice calls over a period of time and creating a plurality of flat files;

collating the flat files by transaction;

processing the collated flat files to create relational files relating to the multiple ~~switched~~ interoffice calls for multiple called numbers;

performing an on line analysis program to obtain a multidimensional database from the multiple ~~switched~~ interoffice calls to multiple called numbers of said relational files, said on line analysis program supporting interactive analysis for one or more users; and

generating an on line network traffic load report from the multidimensional database based at least in part on said interactive analysis.

45. (Previously Presented) The method according to claim 44, wherein the service switching points are central office switches, tandem switches, or end office switches.

46. (Currently Amended) The method according to claim 44, wherein the monitoring step includes monitoring for ~~normal operation~~ congestion in a trunking network as a result of unbalanced loading between the service switching points in the voice-switching telecommunications network.



00-VE06.12 CON 1 (65632-0056)  
Serial No. 09/783,117

47. (Currently Amended) The method according to claim 44, wherein the monitoring step includes monitoring for ~~normal operation~~ congestion in a trunking network as a result of routing utilization between the service switching points in the voice-switching telecommunications network.

48. (Currently Amended) The method according to claim 44, wherein the period of time relating to the monitoring of ~~call carrying voice~~ signaling between the service switching points and the signal transfer points and selecting the ~~call carrying voice~~ signaling relating to multiple ~~switched~~ interoffice calls is greater than twenty-four hours.